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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DOUGHERTY, THOMAS M

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,014

Applicant(s)

SHLIMAK ET AL.

Examiner

Thomas M. Dougherty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-31 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 and 21-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understood from the specification or the figures how "said additional (or second) wave channel is screened from said external field" in claims 7 and 21. For example, the lower channel (54) of Fig. 3 is noted as being screened at p. 23, ll. 2-5, yet it is on the same structure as the implicitly unscreened channel. Thus this description is not understood and requires clarification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 3-5, 12, 13, 15, 16, 18, 19 and 33-37 are rejected under 35

U.S.C. 102(b) as being clearly anticipated by Maier, et al. (US 5,966,008). Maier

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teaches (fig. 1) a sensor for use in a device for non-contact of an external field (5) by positioning the sensor at a spot where the external field (5) is to be detected, the sensor comprising a delay line (see col. 2, ll. 5-10), which is to be exposed contactlessly to action of the external field and comprises: a transducer arrangement (21) that is provided on a substrate (22) made of a material capable of transporting therethrough a wave (26) sensitive to said external field (5), and defines a wave channel for the wave (26) propagation through the substrate (22), the transducer arrangement (21) being capable of being actuated by an interrogation signal (310) to generate said wave propagation through the wave channel and capable of converting the wave (26) into an output response signal (310), said external field (5) affecting a change in a velocity of the wave propagation (26), said output response signal (310) being thereby informative of said external field (5).

He teaches that an external field to be detected is an electric field, said substrate being made of a piezoelectric material and said wave being a surface acoustic field (see col. 2, ll. 5-15). As he teaches (col. 6, ll. 13-20) a production of electrostriction in his piezoelectric material, his substrate is clearly made of an electrostriction material. Said transducer arrangement (21) comprises one pair of transducers (23, 26) defining said wave channel therebetween.

An active unit operable to emit said interrogation signal (300) to be received at said sensor, receive said output response signal (310) and process said output response signal for determining and indicating the external field is inherently employed with the invention.

It is likewise inherent that said active unit is adapted to be positioned remotely from the passive unit (as indicated by use of the antenna); both the active and passive units are provided with respective emitting-receiving antennas (inherent), and said signal source of the active unit constitutes a transmitter (at a minimum), thus enabling safe non-contact and remote detection of external fields and electric voltages.

In his figure 2, Maier shows a system for remotely detecting the presence of an external field at a plurality of check points (5, 15), utilizing the device according to claim 13, comprising one said active unit (indicated by the single pair of lines 300 and 310), and a number of passive units (21, 21'); said passive units (21, 21') of the device being mountable at the respective check points (5, 15) while the active unit is capable of remotely communicating with said passive units (21, 21') by emitting said number of interrogation signals respectively associated with the number of the passive units (21, 21') and recognizing the number of respective response signals. As Maier shows the claimed structural features, the claimed functionality is regarded as being met by him. The structure of figure 2 requires the steps of mounting each of said passive units at a spot where the electric field is to be detected, and activating the active unit to obtain indication of the electric field at each of said spots. Given the structure shown, it is clear that the intent is to detect faults. Whether the active unit is provided in a vehicle is a clearly arbitrary decision based on good judgement, but not novelty.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier, et al. (US 5,966,008) in view of Ruigrok (US 6,278,588). Given the invention of Maier as noted above, he further shows said external field to be detected may be a magnetic field, he doesn't note use of a ferrite substrate. Ruigrok notes a magnetic field sensor which comprises a ferrite substrate, see col. 1, ll. 44-46 and ll. 58-59. It would have been obvious to one having ordinary skill in the art to employ a ferrite substrate in the magnetic field sensor of Maier, et al. at the time of their invention since this would enable accurate measurements and the device may be made small since the ferrite may be in the form of a thin film.

Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maier, et al. (US 5,966,008). Given the invention of Maier as noted above, he further shows said transducer arrangement (21) comprises a phase-coded transducer capable of being actuated by a phase coded interrogation signal (indicated in the ABSTRACT and at, said output response signal being maximal at a predetermined external field (see col. 2, ll. 44-52, where he notes that his device "provides a new field of application for a radio-interrogated, remote-interrogated sensor device with a surface-wave configuration which is also configured in a manner particularly matched to the **selected field** of application"), and the value of

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said output response signal being indicative of the external field affecting the velocity of wave propagation. It is not clear whether or not the interrogation signal matches with the code of the transducer. This appears however as a method of using the structure defined by the claims. As such it carries no patentable weight at this time. While the Applicants note that the structure is "capable of" performing a specific function, this is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 8, 11 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maier, et al. (US 5,966,008). Given the invention of Maier as noted above, he further shows electrode plates on opposing sides of his substrate, which generate an acoustic response in his figure 4. He doesn't note this structure as a field transformer. However, the Applicants in their claim 8 do not provide any structure for their field transformer, it is merely listed with its functionality described. What components may constitute it are not defined in the claim. While the Applicants show a pair of capacitors in figure 7A, one with only air as the dielectric between the plates and the other with the substrate as the dielectric, no such structure is claimed.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maier, et al. (US 5,966,008). Given the invention of Maier as noted above, he further shows said delay line is a resonator delay line characterized by a certain reference resonance frequency value (col. 8, l. 72 to col. 9, l. 10) value, the resonator delay line being formed by a pair of reflectors (123, 123' in fig. 8) placed on a surface of the piezoelectric

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substrate (22); the external electric field in the vicinity of said wave channel effecting a shift of a resonance frequency of the resonator delay line from said certain reference frequency value, said shift being informative of the shift in intensity of the external electric field from a reference value. He doesn't show said transducer arrangement in the form of a single transducer between the reflectors defining the wave channel.

Regarding this however, Maier shows additional structure not required by the Applicants' invention. While Maier discloses the invention as claimed, the fact that it discloses additional structure not claimed is irrelevant.

Allowable Subject Matter

Claims 7 and 21-31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show or fairly suggest an embodiment including a plurality of wave channels of different length. While the provided reference of Reindl et al. (WO 93/13495) shows a multichannel device, the device is intended for use in temperature determinations as opposed to electric or magnetic fields and the reference fails to show the channels of different lengths.

Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show or fairly suggest an embodiment including two

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capacitors of different values of capacity and plate spacing which are connected in parallel in an external field on a substrate on which is generated a wave that propagates in a wave channel and provides response to an interrogation signal.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on at least some aspects of the claimed invention. Ruile, et al. teach use of a passive electric field detector including a piezoelectric substrate and surface acoustic waves generated therein.

Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

tmd
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April 16, 2002

Thomas M. Dougherty
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PRIMARY EXAMINER
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